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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,589

02/15/2005

Shinichi Tsuchida

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EXAMINER

NOORISTANY, SULAIMAN

ART UNIT

PAPER NUMBER

2146

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,589	Applicant(s) TSUCHIDA ET AL.	
	Examiner SULAIMAN NOORISTANY	Art Unit 2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-27,29,33,38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-27,29,33,38 and 39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: ____. |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :02/15/2005, 05/12/2005, 02/28/2007.

Detailed Action

This Office Action is response to the application (10/524589) filed on 15 Feb 2005.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/18/08 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-27, 29, 33 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Moyer** Patent App. No. **US 2002/0103898** in view of **Sen (Internet Draft "draft-sen-midcom-fw-nat-01. txt")** further in view of **Humpleman** Patent No. **US 6466971**.

Art Unit: 2146

Regarding claims 1, 27, 29 & 38, Moyer teaches a system, method (**system & method**) and a program stored on a computer-readable storage medium (**computer**).

Moyer also teaches wherein a home terminal apparatus ("**Networked Appliance**", **paragraph [0073]**) connected to a router via a home network (**Fig. 6, unit 117 -- Set Top Box (STB), which may include a RGW, Cable Modem, ADSL Modem or whatever**) and for sending/receiving packet data ("**messages**", **paragraph [0073]**) to and from a router ("**residential gateway in form of ... Network Address Translator (NAT)**", **paragraph [0073]** and **Fig. 3**) connected to an external network ("**wide area network 300**", **paragraph [0073]** and **Fig. 3**) to which a server apparatus is connected (**SIP proxy**), said home terminal apparatus:

a packet generation unit operable to generate packet data to be sent to the server apparatus via the router ("**device ... IP capable**", **paragraph [0073]**) and;

a communication unit ("**SIP user agent**", **paragraph [0015]**) operable to send/receive the packet data to and from the server apparatus via the router ("**user agent client ... sends SIP requests ... user agent server ...accepts requests ... and sends back responses**", **paragraphs [0015-0016]**),

wherein said protocol determination unit is operable to determine that said home terminal apparatus is to communicate with the server apparatus using (i) a first communication protocol, being a User Datagram Protocol (UDP) ("**UDP**", **paragraph [0054]**), when said communication unit sends address notification packet data ("**REGISTER requests**", **paragraph [0019]**) generated by said packet generation unit

to the server apparatus ("**Registrar ... co-located with a Proxy**", paragraph [0019]),
and

(ii) a second communication protocol, being a Transmission Control Protocol (TCP) ("**TCP** ", paragraph [0054]) when said communication unit sends/receives control information ("**method called DO**", paragraphs [0051-0053]) to and from the server apparatus (see **bidirectional message exchange (1)-(6) in the scenario shown in Fig. 12**).

Wherein when said communication unit receives, from the server apparatus ("**user agent client ... sends SIP requests ... user agent server ...accepts requests ... and sends back responses**", paragraphs [0015-0016]), a notification packet indicating an occurrence of a control request to control said home terminal apparatus ("**REGISTER requests**", paragraph [0019]):

Said packet generation unit is operable to generate a connection request packet, which is a packet for making a connection request to establish a connection to the server apparatus ("**Registrar ... co-located with a Proxy**", paragraph [0019]); and

Said communication unit is operable to receive, from the server apparatus, control packet data, which is data including the control request ("**user agent client ... sends SIP requests ... user agent server ...accepts requests ... and sends back responses**", paragraphs [0015-0016]), after the connection is established between the server apparatus and said home terminal apparatus (see **bidirectional message exchange (1)-(6) in the scenario shown in Fig. 12**) using the second communication protocol ("**TCP** ", paragraph [0054]).

With respect to claim 1, 27, 29 & 38, Moyer does not explicitly teach a protocol determination unit operable to determine a communication protocol used between said home terminal apparatus and the server apparatus;

Said protocol determination unit is operable to determine that the connection request packet is to be communicated using the second communication protocol

Humpleman teaches that is well known to have a protocol determination unit operable to determine a communication protocol used between said home terminal apparatus and the server apparatus (**Once a HNORB&IL is located, the device and the HNORB&IL can establish a point-to-point Transmission Control protocol (TCP) or User Datagram Protocol (UDP) connection for registration, interface request and fetch, and device lookup services – Col. 17, lines 37-41**);

Said protocol determination unit is operable to determine that the connection request packet is to be communicated using the second communication protocol (**If a UDP protocol is not available, a TCP protocol can be used for high bandwidth connections such as IEEE 1394 – Col. 17, lines 41-43**).

With respect to claim 1, 27, 29 & 38, Humpleman is silent in terms of “*periodically and repeatedly at a predetermined sending interval*”

Sen teaches that it is well known to send address notifications periodically and repeatedly at a predetermined sending interval (**“PING” keep-alive messages sent periodically to a designated server -- Page. 7, lines 3-11; Page. 11, lines 6-20**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moyer’s invention by HTTP-based XMLRPC can also be

Art Unit: 2146

utilized for device to HNORB&IL communications. For example, a device 14 can remotely call a "register" method of HNORB to pass the device interface as one or more parameters, or, a XMLRPC call can retrieve a partial or entire device interface from the IL as a XMLRPC response or return value. As aforementioned, more than one HNORB&ILs can run in a local home network simultaneously, wherein each HNORB&IL recognizes a subset of available devices and one HNORB&IL can communicate with other HNORB&ILs to locate the devices it can not find. Multiple HNORB&ILs on one local home network can locate each other automatically by using broadcasting messages, such as UDP or TCP. In this case, multiple HNORBs construct a distributed object request broker, while multiple Interface Libraries construct a distributed interface library. To provide fault tolerance, if one of the HNORB&IL should terminate unexpectedly, all devices registered with this HNORB&IL are notified and said devices can automatically register with another available HNORB&IL, as taught by Humpleman.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moyer's invention by sending address notifications, knowing well that both SIP and NAT are standardized at the Internet Engineering Task Force (IETF), and that IETF working group "Midcom" primarily focuses on the application of the middle box architectures. By now simply enhancing said home terminal apparatus of Moyer by the additional SIP "PING" feature of Sen, proposes to solve this problem by allowing the Middle-box to be controlled through a generalized control interface by an application-aware entity called Midcom Agent, as taught by Sen.

Independent apparatus claim 27 includes all the features of apparatus claim 1 and furthermore, some additional features, however, Moyer also discloses according to all these additional features:

the server apparatus includes a second communication unit operable to send / receive packet data ("**proxy server ... acts as both a server and a client for ... for making requests**", paragraph [0017])

the server apparatus includes a second packet generation unit operable to generate packet data to be sent to the home terminal apparatus ("**in an internet context, the proxy server receives ... sends ...**", paragraph [0017]). For this reason, the arguments stated above with regard to claim 1 are also valid for claim 27.

Independent claim 29 relates to a method, which entirely corresponds to the non-inventive subject matter of apparatus claim 27

Independent claim 38 relates to computer software products, which entirely correspond to the non-inventive subject matter of method claim 29.

Regarding claim 5, 13 & 33 Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claim 1, as described above. Moyer and Sen further teaches -- **the connection request from the protocol determination unit to the server to establish a session when a notification has been received indicating an occurrence of a control request, the receipt of the control data over the established connection using the second protocols in claim 33 the retrieval of the control request data in claim 5, the generation and sending of a notification**

packet by the server in claim 13 are all obvious combination of sending a SIP session invitation or notification, setup of a standard TCP session and application data exchange over a SIP session.

Regarding claim 4, 6, 7, 19 & 20, Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claims 1 & 13, as described above. Moyer further teaches -- **The management units to manage a validity certificate and to send it according to claim 4, the authentication units to authenticate a server according to claims 6, 1, 19 to authenticate the terminal apparatus according to claim 20 are obvious from the well-know SIP security concerns and standard SIP message integrity and access control method ("RFC2543", Paragraphs [0013] and [0022]).**

Regarding claim 8, Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claim 6, as described above. Moyer further teaches -- **It is obvious from SIP standard (paragraph [0013]) to destroy packets according to predetermined interval of claim 8, since SIP already forces to discard packets in server when a registration has been expired.**

Regarding claim 9, 10 & 21, Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claims 1 & 13, as described above. Moyer further teaches -- **the encryption unit and the channel encryption in claims 9, 21 are**

known and the use of SSL in claim 10 is obvious from (paragraph [0454-455]) since SSL is just another alternative method to encrypt links over networks.

Regarding claim 11, Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claim 1, as described above. Moyer further teaches -- **the control unit of claim 11 is known as "appliance controller" (paragraph [0092]).**

Regarding claim 12, Moyer and Sen together taught the home terminal apparatus according to Claim 11, as described above. Moyer further teaches --
The plurality of apparatuses and apparatus control units connected to the home terminal apparatus in claim 12 is obvious (paragraph [0002]).

Regarding claims 14, 15, 16, 17, 18 & 33, Moyer, Sen and Humpleman together taught the home terminal apparatus according to Claims 1 & 13, as described above. Moyer further teaches -- **The mobile terminal device being capable to send control requests, the second packet generation unit preparing and the second communication unit operable to send the notification packet of claims 14, 18 as well as the communication unit operable to send / receive the control data of claims 15, 16, 17, 33 are an obvious combination of the SIP event notification mechanism in (paragraph [0030]) and the "remote control" scenarios (paragraphs [0093-0101], Figs. 2-7).**

Art Unit: 2146

Regarding claim 18, Moyer, Sen and Humpleman together taught the method of claim 13, as described above. Moyer further teaches -- **The additional features terminal information storage unit to store terminal address data, extraction unit to extract terminal address data and second packet generation unit to generate control requests including that extracted address information server apparatus in the server according to claim 18 are obvious (paragraphs [0093-0094], Fig. 5).**

Regarding claims 22, 23, 24 28, 33 & 39, Moyer, Sen and Humpleman together taught the method of claim 13, as described above. Moyer further teaches – **The server connected to the external network including second packet generation and second communication units operable to generate and send a notification packet containing a server identifier as well as the home terminal apparatus including storage, extraction and packet generation units operable to store and extract server identifier / address and / or to generate a connection request of claims 22, 23, 24, 33 39 the port number of claim 23, the application server URL of claim 24, are obvious from (paragraphs [0020] and [0099]) in connection with the state-of-art IP addressing standardized in the IETF Internet Protocol Suite.**

Regarding claim 25, Moyer, Sen and Humpleman together taught the method of claim 24, as described above. Moyer further teaches – **The address list notification server including a sending unit operable to send address list notification packets and the home server update unit operable to update the stored application server**

address data in claim 25 are obvious from the address and name resolution mechanisms (e.g., DNS) being part of the IETF Internet Protocol Suite as well as from SIP REDIRECT (paragraph [0018]).

Regarding claim 26, Moyer, Sen and Humpleman together taught the method of claim 1, as described above. Moyer further teaches – The direct connection between router and external networks of claim 26 is known from scenarios in which a network is divided into more than one sub-domains, a typical application scenario for standard edge routers with NAT functionality.

Response to Arguments

Applicant's argument with respect to claims 1, 4-27, 29, 33 and 38-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sulaiman Nooristany 03/25/2008

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2146